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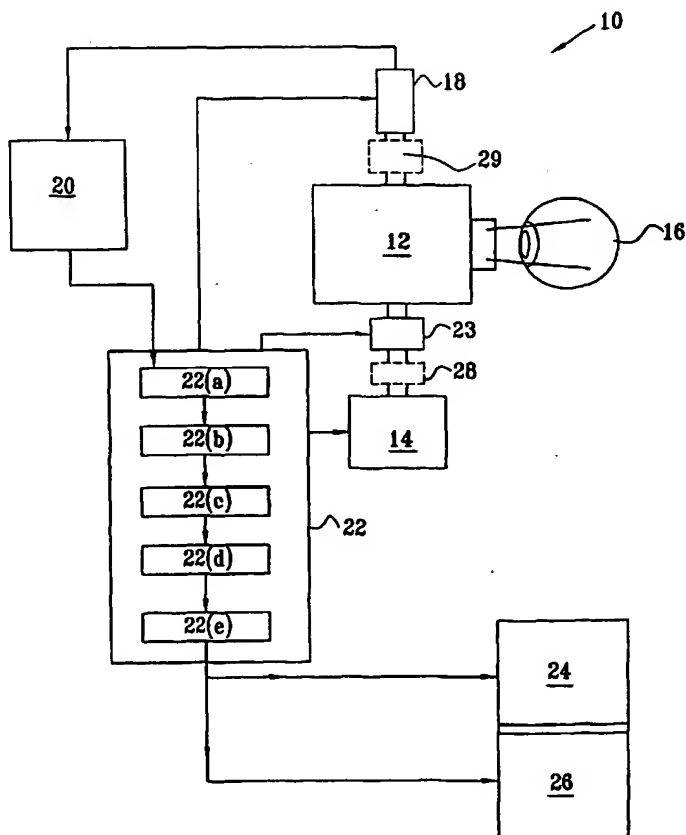
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- (54) Title: CHARACTERIZATION OF ARTERIOSCLEROSIS BY OPTICAL IMAGING**



(57) Abstract: A method and system for detecting abnormalities in the properties of the walls of a subject's blood vessels by observing the characteristics of blood flow in vessels which are optically accessible, such as the retinal vasculature. A time sequenced series of images is taken, and the images are processed to eliminate the background and render erythrocyte motion visible. Information about the state of the inner wall of the blood vessel which has been imaged is obtained from the characteristics of this blood flow. This information can be extrapolated to provide information about the state of the blood vessels elsewhere in the subject. In addition, a system and method is described for detecting arteriosclerotic plaque on the walls of blood vessels by labeling the plaque with a molecular label having desired optical or radioactive properties, and directly imaging the plaque either in an optically accessible blood vessel, or by imaging radioactive label in the plaque in a blood vessel anywhere in the body.